



Date of Application, 31st Jan., 1893

Complete Specification Left, 30th Nov., 1893—Accepted, 27th Jan., 1894

PROVISIONAL SPECIFICATION.

Improvements in Automatic Weighing Machines.

We, EDWARD HENRY BECKETT, of Glen-eu-lan, Tan-y-grisiau, in the County of Merioneth, North Wales, and CHARLES WARREN ROBERTS, of Plas Weunydd, Blaenau Festiniog, in the County of Merioneth North Wales, Engineers, do hereby declare the nature of this invention to be as follows :—

5 First, certain details in the construction or arrangement of the dial indicating mechanism, and secondly, certain details in the construction or arrangement of mechanism whereby the weight of persons or articles, on the platform, is automatically registered and permanently recorded.

To carry our invention into practice, and as we show in the annexed drawings of 10 which

Figure 1, Sheet 1, is a front elevation, showing the indicating mechanism in its normal position, and,

Figure 2, Sheet 2, is a back elevation showing the release action. This is also in its normal position and corresponds with the front elevation, Figure 1.

15 The invention consists of a central rod A. which is provided at its upper end with a toothed rack B. which gears into a toothed wheel C. The wheel C. is fixed to a spindle which carries the dial pointer at its outer end.

The lower end of the rod A. runs free into or over the rod D. and is fitted with an adjustable stop Z. This rod D being connected to the levers of the platform 20 in the usual way.

The rod A. is free to fall by its own weight and is guided by the guide rollers E.

When A is in its normal position, it is retained by the catch F which slips under the noggle or lug G, this noggle or lug being fixed on the back of the 25 rod A.

The catch F. is fixed on the spindle H. and is held up to its work by the lever J. and the counterpoise K.

The spring finger L. is secured at one end to the rod A. and the other or outer end is provided with a pencil.

30 The reels or drums M. and N. are set and revolve on the vertical spindles O. & O.

A coil of paper or metallic tape is wound on the reel or drum M. and the loose end made fast on the reel or drum N. so that the said tape may be wound from the one on to the other.

The levers P. and Q. are fixed to a spindle R and form a bell crank.

35 The out end of the lever Q is forked and rests on the pin S fixed in the rod A.

The top end of the lever P. is connected to the rod T. The end of the rod T. is fitted with a moveable finger U. which gears into a ratchet wheel V. fixed on the reel N.

W. is a counter connected to the top of the rod A. by means of the connecting 40 rod X and registered a unit for each descent of the rod A.

Y. is the weigh spring, and receives the weight from the platform through the rod D.

The action of the machine is as follows.

45 A certain body or weight to be ascertained, is placed on the platform in the ordinary way. The said weight being transferred to the spring Y. through the ordinary platform levers, and the rod D.

The spring Y is compressed a certain distance the rod A being retained in its normal position by the catch F.

[Price 8d.]

Beckett & Roberts' Improvements in Automatic Weighing Machines.

The catch F. is now removed by turning the spindle H. slightly in one direction. This may be done by a handle on the end of the spindle, or, by an arrangement of levers as shown in Figure 2, which are actuated by a falling body, such as a check, or tally, falling on the ends of the levers A¹, A¹, which by means of the connecting rods B¹ and B¹ to the double ended lever C¹ gives a rotary motion to the spindle H. 5

The catch F. being removed, the rod A. falls until the stop Z. rests on the end of the rod D. and thus moves a distance equal to the compression of the spring Y.

The motion of the rod A. is communicated to the dial pointer through the rack B, and the wheel C. and the weight is shown on the scale on the dial. 10

The finger L. with pencil attached has also traversed the distance of the compression of the spring Y, and in its descent has marked a line on the tape stretched between the drums M. and N. This line, if read with a suitable scale will give the recorded weight of the article on the platform.

Now, remove the weight from the platform and the spring Y. will return to its normal position and carry with it the rod A. 15

The rod A. by means of the rack B. and the wheel C. returns the dial pointer to zero. Also, by means of the connecting rod X it moves the counter W and registers one unit.

Also, the pin S. raises the lever Q and imparts motion through the lever P and rod T, to the ratchet wheel V. and turns the reel or drum N. thus winding the tape on to N. and off M. and places a fresh column under the pencil on the finger L. ready for the next load to be placed on the machine. 20

Dated 28th day of January 1893.

E. H. BECKETT.
C. WARREN ROBERTS. 25

COMPLETE SPECIFICATION.

Improvements in Automatic Weighing Machines.

We EDWARD HENRY BECKETT of Glan-eu-lan, Tan-y-grisiau, North Wales and CHARLES WARREN ROBERTS of Plas Weunydd, Blaenau-Festiniog North Wales, Civil Engineers, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:— 30

This invention has for object the construction of a weighing machine in or by which the weighing of the articles is shown on a dial, a record of the number of weighings made and the respective weights in addition to a checking system by which the person weighing the goods or articles can be identified supposing several persons had access or be told off to do the weighing, there being no indication of weight or movement of the indicating mechanism until an appliance such as a token or tally of special kind be put into the machine to serve for moving a balance and freeing itself the movement of the balance disengaging a locking device before the weighing and recording can take place. The recording is by marking paper which moves a stage at each weighing. 40

As an example of the utility of our invention, supposing six persons in a wharf or factory had the power to weigh and receive or weigh and deliver goods, we provide each of the six persons with metal tickets specially marked or numbered by which they would be known. Now say No. 3 conducts a weighing, he, after placing the goods upon the machine platform, inserts a No. 3 ticket, this by dropping on certain levers releases the locking device and the weighing, the recording and the numbering appliances are set free to act accordingly. The same operations are brought about after any other ticket is inserted and so on. The order of the tickets found in the machine correspond to the recording chart, thus a complete and perfect system of checking is established, the only duty 50

Beckett & Roberts' Improvements in Automatic Weighing Machines.

performed by the weigher being to drop a ticket in and the machine does the rest.

The invention will be clearly understood by reference to the annexed drawings in which

5 Figure 1 is a front sectional elevation.

Figure 2, a side sectional elevation.

Figure 3, a sectional elevation from the back of the upper frame, and

Figure 4, a plan on the line *a, a*, of Figure 3.

As represented on the drawings the machine is supposed of the usual platform
10 kind, with a rod A and spring B for compression by the weight of the goods the upper mechanism remaining fixed until the token or tally has been put into the frame and upon a rod V, or tube, or receiver chamber, to press down levers W, W, and cause release of stop or catch X from block Y to free the indicating and recording mechanism.

15 The metal token or tally, having a central hole, when placed over the rod V after opening the flap V¹ slides down said rod and its weight on the levers W, W, overbalances them and then slides clear but remains upon the rod for after collection and checking.

The upper end of the rod A is surmounted by a screw thimble *b* for the
20 adjustment of the nut *c* for putting compression on the spring B and thereby balancing the normal weight of the platform on its beam. The upper end of the rod A is hollow for the lower end of a second rod C to move in to the distance of the springs compression, due to the weight put on the platform, the nut *d* on the rod C acting as a cushion to prevent concussion and to limit the descent of the
25 rod C in accordance with the length of the rack D and the desired travel of the finger F.

The rod C has at its upper part a rack D and is guided for vertical motion by the rollers E, E, the rack D being used for operating the finger F by the pinion G to indicate the weight in the well known manner. The rack D by its arms I
30 and link J causes the counter K to register the number of weighings in succession, said index mechanism being enclosed in a casing but visible through a glass.

The rod C carries a pointer L with a pencil or marker projecting therefrom to descend with the rod C and bear against and mark the surface of paper M secured to two reels N. N¹ from one of which the paper can be drawn and taken up by
35 the other at each uprising motion of the rod C by the stud pin P pressing up the arm Q which otherwise rests on it.

The stop Q¹ prevents the arm Q descending more than is required for the paul S to engage in the next tooth in order that the pencil in returning may go back over a great part of the same mark it made in its descent.

40 The arm Q is pivoted at R to operate the paul S for pushing the reel N¹ forward a stage to bring a fresh part of the paper in line with the marking pencil. The reels N. N¹ are held in tension by the springs and pinch nuts T. T, the previous marking on the paper having been moved clear of the sight glass which is in front, though the marking when done can be seen by the person weighing the goods and
45 before removing them from the scale platform, there being a rigid backing U to ensure the prominent marking on the paper.

The horizontal line markings on the paper are graduated to represent given weights and the distance the pencil travels vertically across these lines will indicate the weights the margin of the paper being marked to correspond to a scale of
50 markings exposed to the man weighing or receiving the goods, said scale being next a glazed window behind which the pencil moves. The number of vertical pencil lines will indicate the number of weighings when the tape paper is removed, but by the index or counter K the total weighings over a given period can be seen.

The lever Q follows the rod C until it rests upon the stop Q¹ drawing the paul S
55 into a fresh tooth of the reel N¹ ready for moving the paper over at the next up motion of the rod C, this being effected by the rise of the platform and rod A when the weighed goods have been lifted or removed from the scale platform.

Beckett & Roberts' Improvements in Automatic Weighing Machines.

As soon as the tally has depressed the levers W, W it passes clear and allows the levers W, W¹ to return to their normal positions under the action of the weight Z so that the stop or catch X moves into position for re-engaging under the block Y when the rod C returns consequent upon the removal of the weight from the platform. 5

We are aware that weighing machines of the kind herein described in which a break exists between the platform rod and the indicating mechanism have been in use prior to the date of our application hereof, and we make no claim to any part which forms the subject of prior Patents but,

Having now particularly described and ascertained the nature of our invention 10
and in what manner the same is to be performed we declare that what we claim is:—

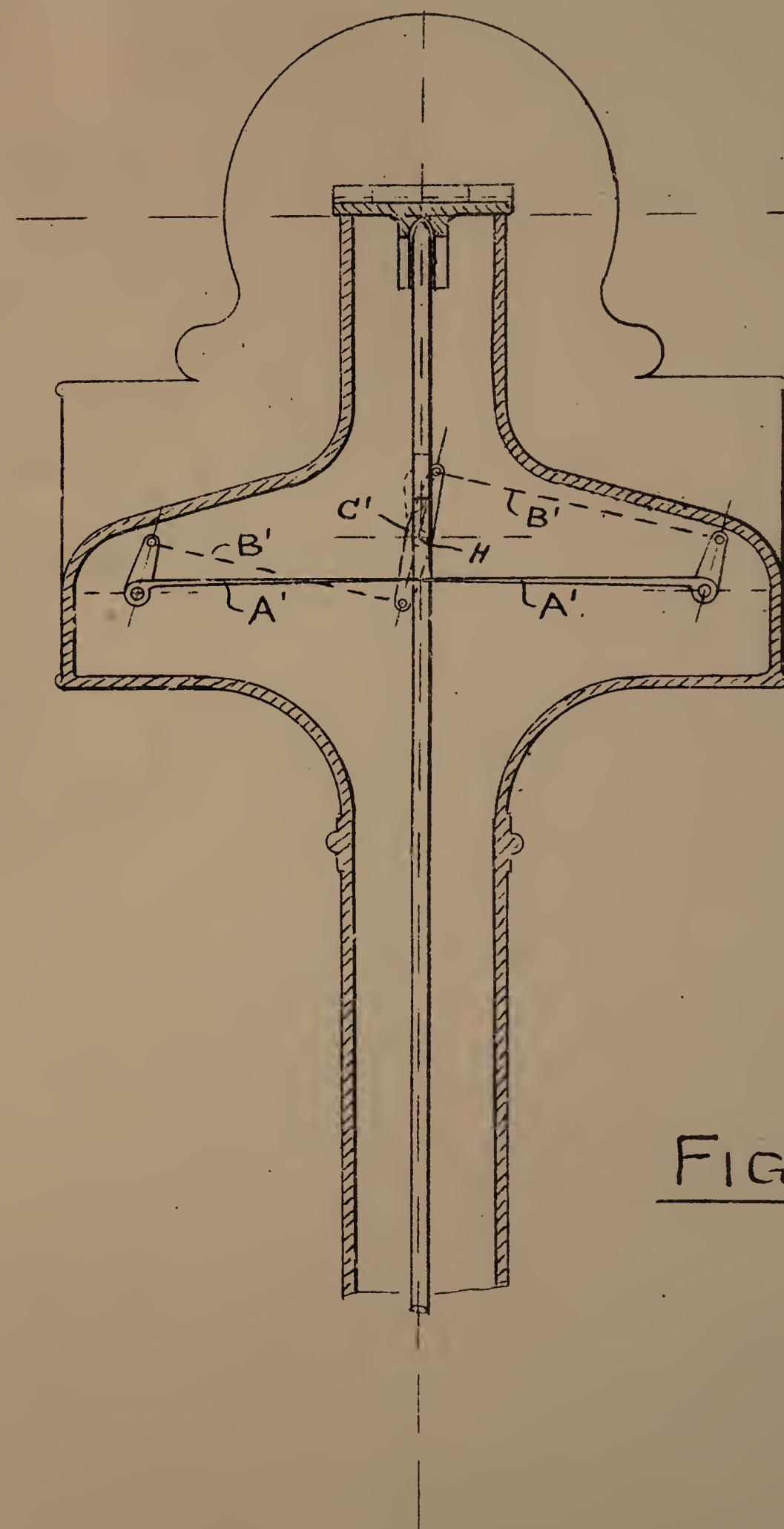
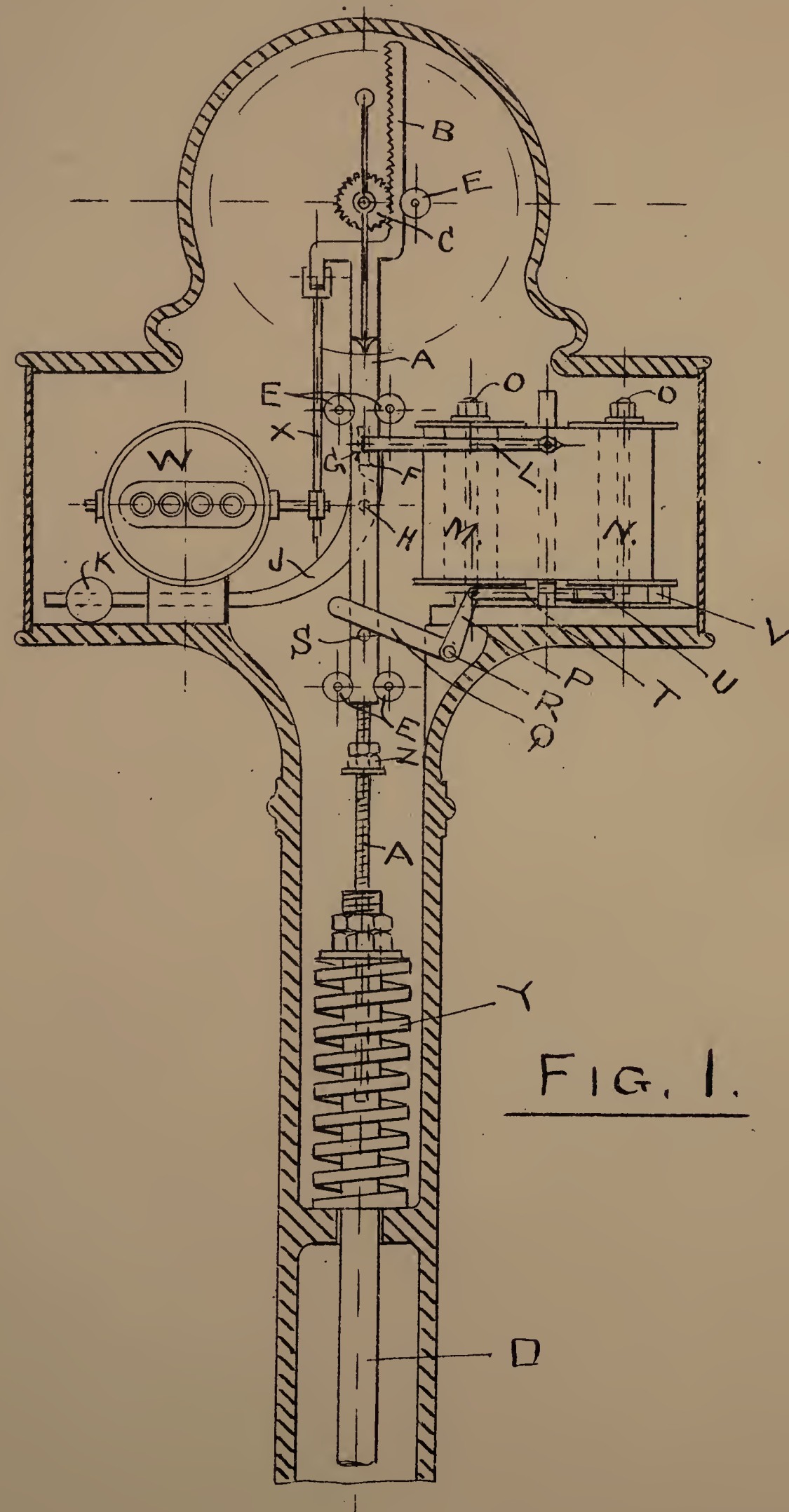
The particular arrangement of appliances shown on the annexed drawings, by which after the goods to be weighed are placed on the platform a tally or token releases a holding claw to allow a prepared paper to be marked to indicate the 15
weight and record the number of weighings in combination with the dial mechanism, said paper being shifted at each uprising of the platform after the weighing has been effected, by crank and paul as and in the manner described.

The 30th day of November 1893.

H. GARDNER, 20
Patent Agent, 166, Fleet Street, London,
Agent for the said E. H. Beckett and C. W. Roberts.

London : Printed for Her Majesty's Stationery Office, by Darling & Son, Ltd.—1894





[This Drawing is a full-size reproduction of the Original.]

Fig: 1.

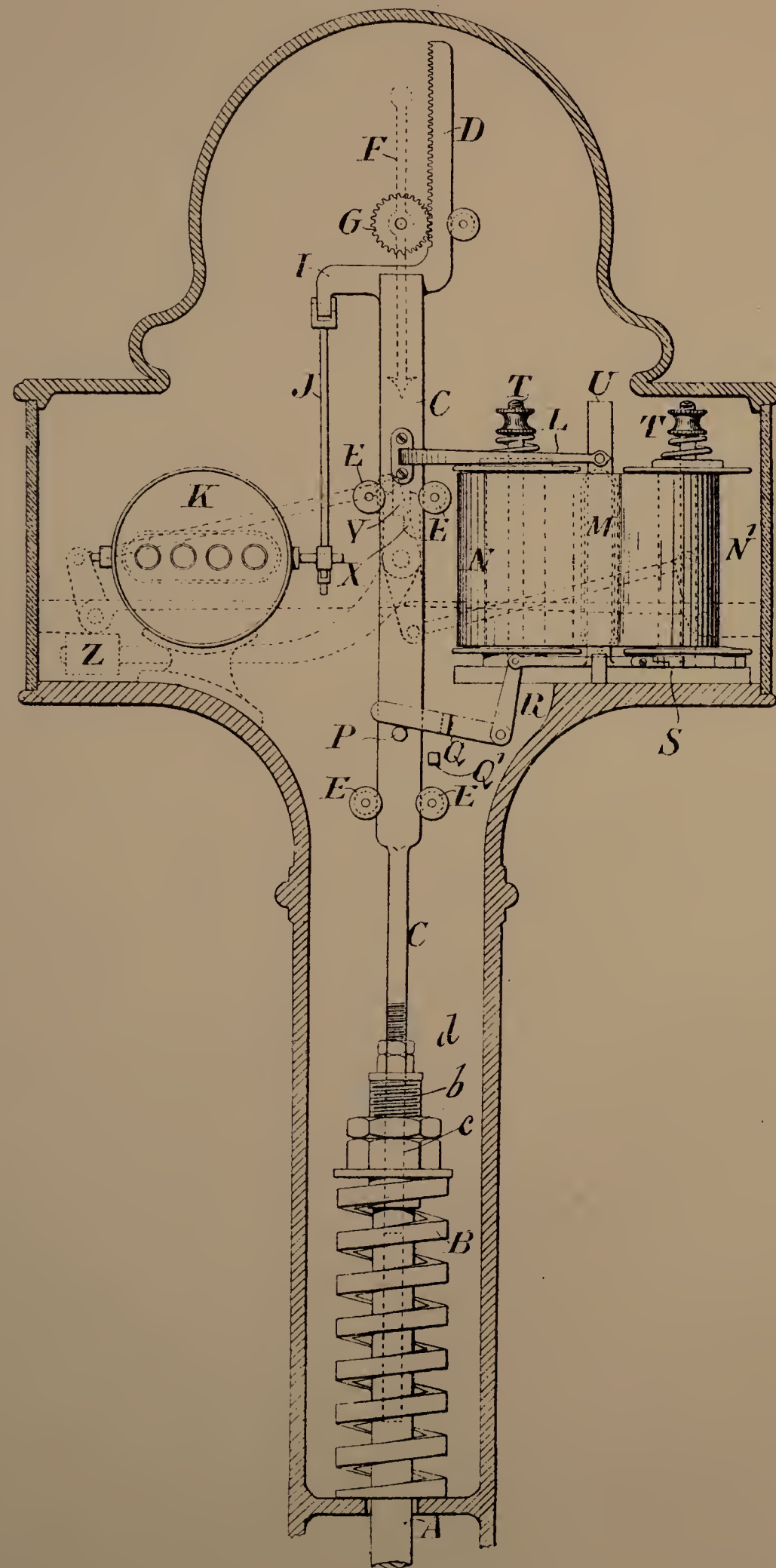


Fig: 2.

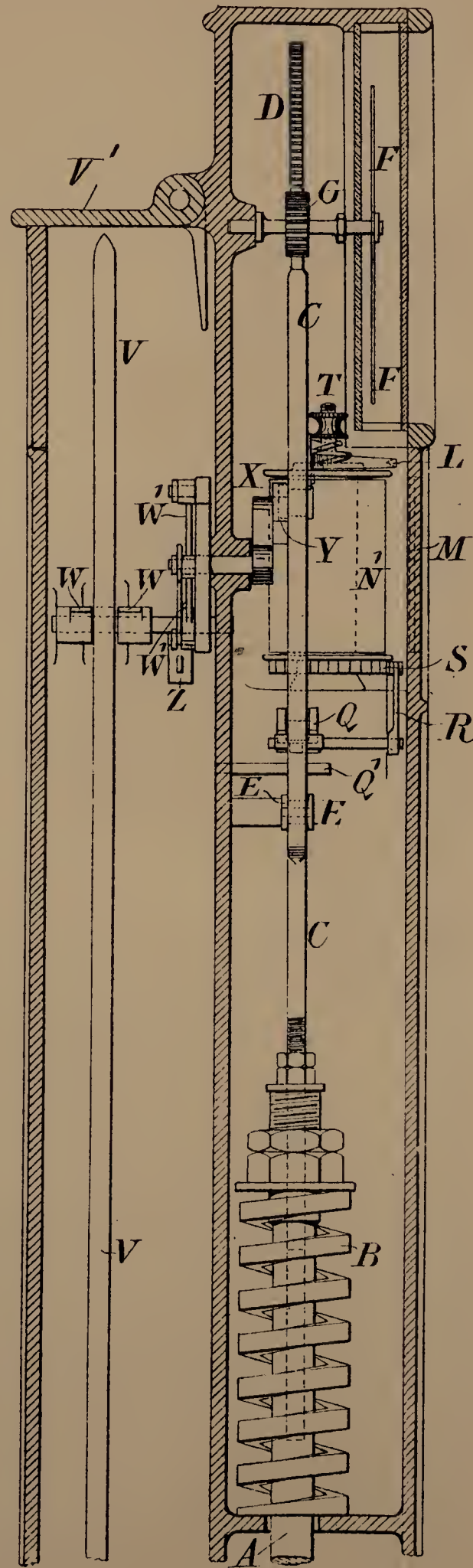


Fig: 3.

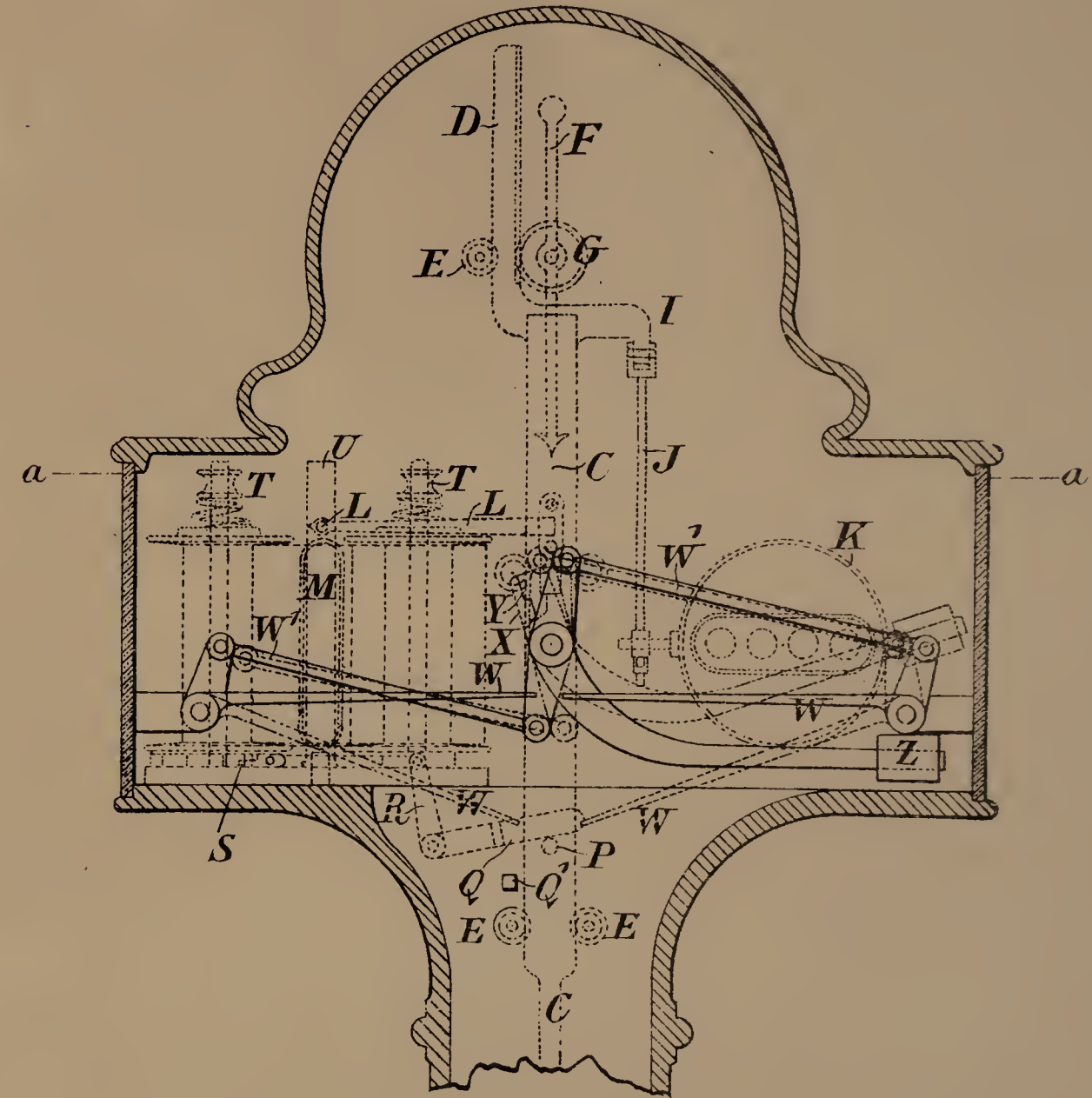
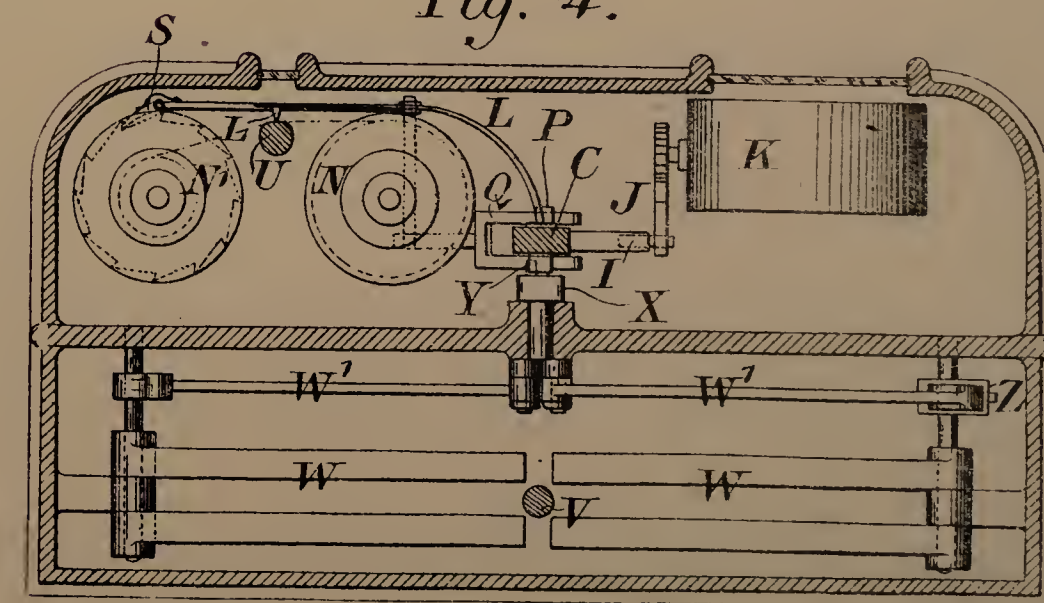


Fig: 4.



[This Drawing is a reproduction of the Original on a reduced scale]

